



# ME 327: Design and Control of Haptic Systems


Spring 2020

## Interactive Session 3: Human Haptics

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# Zoom Etiquette for questions and comments during interactive sessions

Type your question/comment in the Zoom chat. If I do not see the chat, your question will be repeated out loud by Brandon.

Alternatively, you can use the “Raise Hand” button  in Zoom to get the attention of the teaching team. Once you are called on, unmute yourself and ask your question. (Mute yourself again after.)



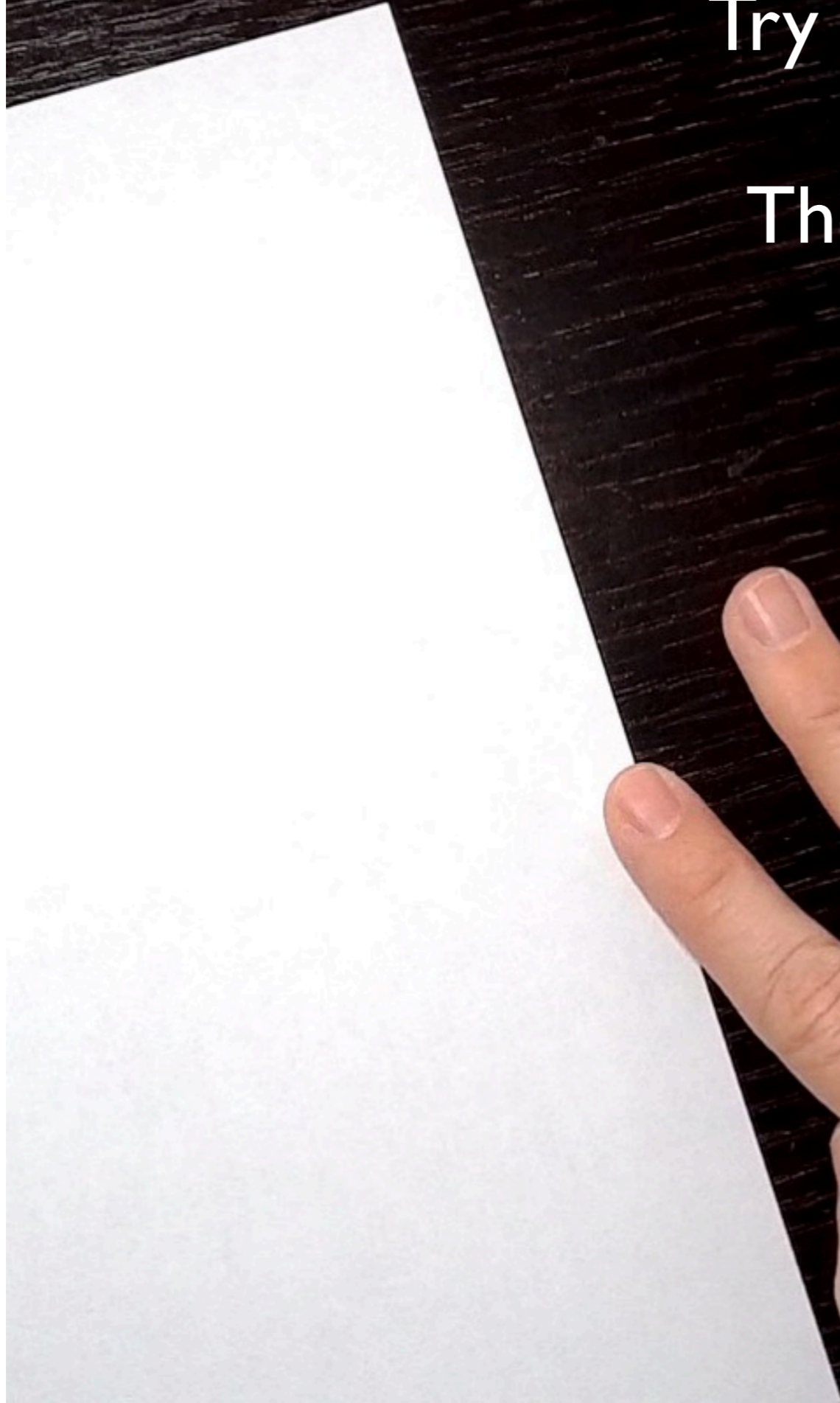
**Rapidly Adapting (RA)**

**vs.**

**Slowly Adapting (SA)**

Try first with one sheet

Then fold to increase  
thickness



# Passive vs. Active Touch



# Passive touch

- Place a pen on your palm
- Focus on the sensation experienced (no sight)
- What do you notice?



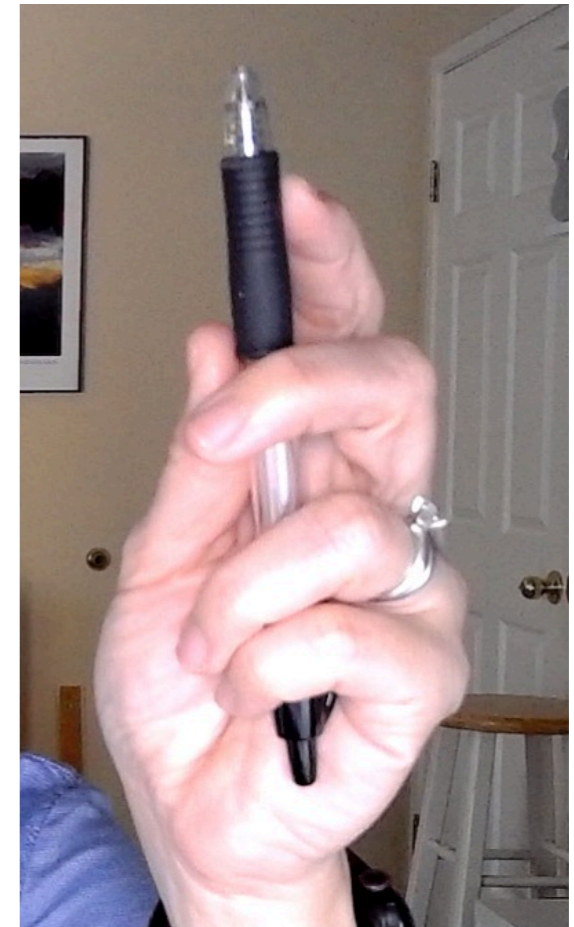
go to [pollev.com/haptics](https://pollev.com/haptics)

or

text **haptics** to 22333  
once to join  
and then text your  
response

# Active touch

- Manipulate a pen with one hand
- Explore the pen (with no vision)
- What do you notice?



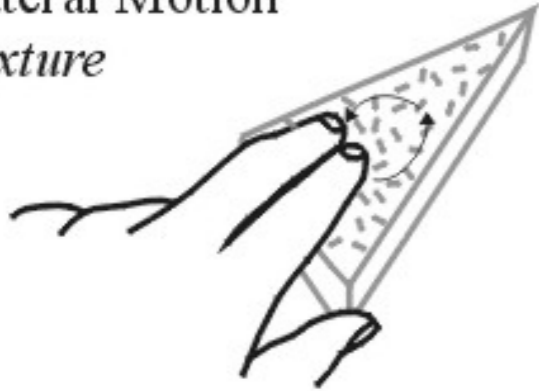
go to [pollev.com/haptics](https://pollev.com/haptics)

or

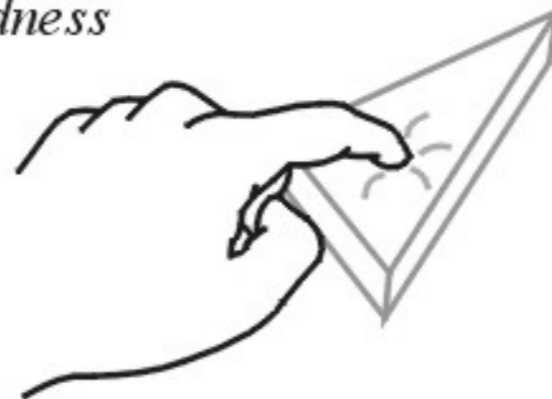
text your response

# Exploratory Procedures

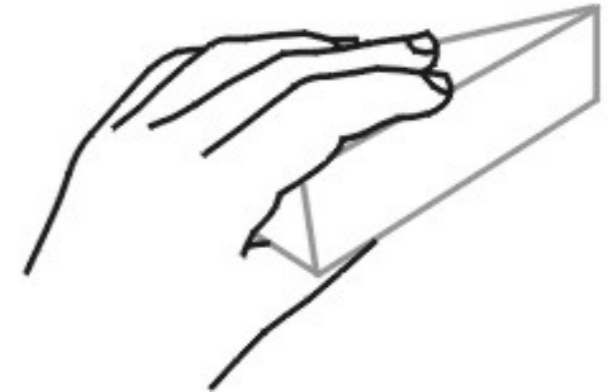
Lateral Motion  
*Texture*



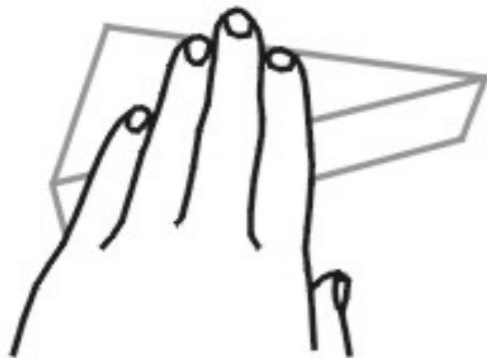
Pressure  
*Hardness*



Enclosure  
*Global shape/Volume*



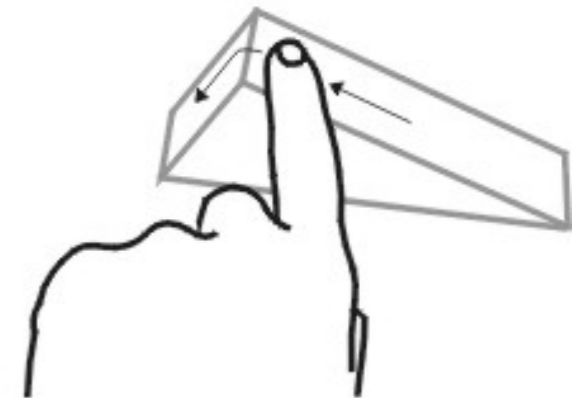
Static Contact  
*Temperature*



Unsupported Holding  
*Weight*



Contour Following  
*Shape*



Adapted from R.L. Klatzky, et al., "Procedures for haptic object exploration vs. manipulation," Vision and action: The control of grasping, ed. M. Goodale, New Jersey: Ablex, 1990, pp. 110-127.



# Proprioception







Make sure to watch the next posted lecture video *before* Thursday's interactive session.

**Please post your questions to the Canvas discussion board.**

Make sure Canvas notifications are on.

Assignment 1 due this Thursday by 11:59 pm PDT.

**Office Hours are posted on Canvas.**

Office Hours/Q&A with Allison now until 10 am.

Question queue (see tab with today's date):

<https://tinyurl.com/HapticsAllison>